

11 Non-communicable Diseases

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This chapter covers the indicators hypertension prevalence rate, hypertension incidence rate, and mental health admission rate.

The South Africa National Department of Health has developed a Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17.^a Nine health conditions were identified as non-communicable diseases (NCDs) in the strategy plan; even though they each have specific clinical interventions, they can be addressed together in joint public health interventions. The listed conditions are: cardiovascular diseases (CVDs), diabetes, chronic respiratory conditions, cancer, mental health disorders, oral conditions, eye conditions, kidney disorders, and musculoskeletal conditions. Each of these conditions is associated with one or more modifiable risk factors including tobacco use, physical inactivity, unhealthy diet, and harmful use of alcohol.

According to the aforementioned strategic plan, the target is to reduce the prevalence of people with raised blood pressure by 20% by 2020 (through lifestyle and medication); and to increase the number of people screened and treated for mental disorder by 30% by 2030.

The data to monitor hypertension incidence and mental health admission rate were sourced from the District Health Information Software (DHIS), while the National Income Dynamics Study (NiDS),^{b,c,d} data were used to monitor the hypertension prevalence rate. The DHIS data are limited in their usefulness since disaggregation by other variables such as data on gender, race or any other demographic characteristic are not available. The greatest advantage though is that at the district level the data are available year on year, unlike the data from surveys, most of which are not conducted annually.

Hypertension, defined as a systolic/diastolic blood pressure of at least 140/90 mmHg, has been identified as an important modifiable risk factor for CVDs such as stroke, ischaemic heart disease, congestive heart failure, kidney failure, peripheral vascular disease, Alzheimer's disease, coronary artery disease and atrial fibrillation.^{e,f} These NCDs are estimated to be the likely leading causes of death in the coming years,^g unless drastic action is taken to combat this.

Hypertension is a risk factor for CVDs and is also associated with other factors, most importantly age, gender, race, tobacco and alcohol use, obesity, and physical inactivity.^h Some of these factors are modifiable, namely tobacco and alcohol use, physical inactivity and obesity.

The main focus in this chapter is to describe the prevalence of hypertension. Among NCDs, hypertension has the highest prevalence and is the easiest condition to measure and monitor. It is also the most likely NCD risk factor to have biomarkers in surveys. The public health priority in reducing the burden of hypertension as per the target in the Strategic Plan would probably be to address the modifiable risk factors associated with it.

The NiDS collects selected biomarkers such as systolic/diastolic blood pressures, pulse rate, weight and height that are useful in monitoring certain risk factors for NCDs. Improvement in the survey's coverage of other biomarkers such as blood sugar and cholesterol would make the NiDS a very vital source for monitoring a higher number of NCD risk factors. Another advantage of using the NiDS data in the DHB is that sampling is stratified at the district level. In addition, NiDS also collects data on self-reported diagnosis for most of the NCDs, including cancer, stroke, asthma and diabetes. Instruments that use self-reported diagnosis have found that health-seeking behaviour differs significantly by gender and age. The annual General Household Surveyⁱ (GHS) conducted by Statistics South Africa collects similar data on self-reported diagnosis with NCDs. The main advantage of all survey data over the DHIS is that they allow disaggregation of the outcome factor by other variables such as gender, age group and race.

a National Department of Health. Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17. Pretoria: NDoH; 2013.

b Southern Africa Labour and Development Research Unit. National Income Dynamics Study 2008, Wave 1 [dataset]. Version 5.2. Cape Town: SALDRU [producer], 2009. Cape Town: DataFirst [distributor]; 2014.

c Southern Africa Labour and Development Research Unit. National Income Dynamics Study 2010-2011, Wave 2 [dataset]. Version 2.2. Cape Town: SALDRU [producer], 2014. Cape Town: DataFirst [distributor]; 2014.

d Southern Africa Labour and Development Research Unit. National Income Dynamics Study 2012, Wave 3 [dataset]. Version 1.2. Cape Town: SALDRU [producer], 2014. Cape Town: DataFirst [distributor]; 2014.

e Rapsomaniki E, Timmis A, George J, Pujades-Rodriguez M, Shah AD, Denaxas S, et al. Blood pressure and incidence of twelve cardiovascular diseases: lifetime risks, healthy life-years lost, and age-specific associations in 1.25 million people. *The Lancet*. 2014;383(9932):1899-911.

f World Health Organization. A global brief on hypertension: silent killer, global public health crisis: World Health Day 2013. Geneva: WHO; 2013.

g Fuster V. Global burden of cardiovascular disease: time to implement feasible strategies and to monitor results. *J Am Coll Cardiol*. 2014;64(5):520-2.

h He J, Muntner P, Chen J, Roccella EJ, Streiffer RH, Whelton PK. Factors associated with hypertension control in the general population of the united states. *Arch Intern Med*. 2002;162(9):1051-8.

i Lehohla P. Use of health facilities and levels of selected health conditions in South Africa: Findings from the General Household Survey, 2011. Pretoria: Statistics South Africa; 2013.

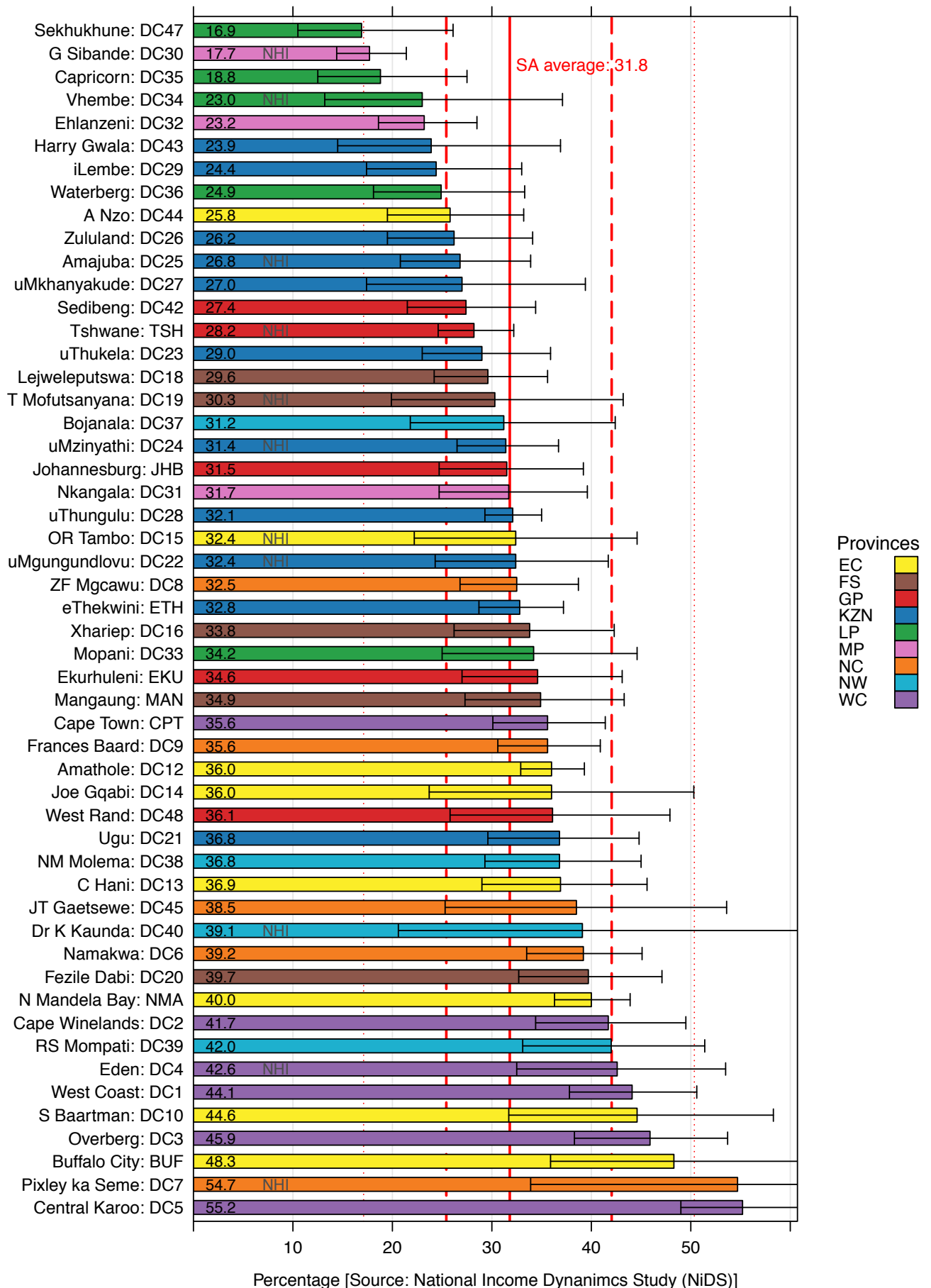
Two types of estimated hypertension prevalence are profiled. The first is based on crude prevalence rate, and the second is a standardised prevalence estimated after accounting for some of the risk factors known to be associated with hypertension. The rationale for using the second method of estimating hypertension prevalence is because some of the factors strongly associated with hypertension, such as gender, age, race and obesity, also showed major differences in the way they are distributed across the districts. In the underlying statistical analysis, adjustment is done for these known factors associated with hypertension, but cognisance is also taken of other unmeasured, unidentified or unknown risk factors associated with hypertension prevalence. These unmeasured risk factors are district-specific and are considered random because again they differ from district to district. In this analysis, there is estimation of each district's prevalence rate and the national prevalence rate.

11.1 Hypertension prevalence (crude rate)

The crude hypertension prevalence rate measures the percentage of people with hypertension (raised blood pressure or on treatment) in the adult population (aged 15 years and older). Figure 1 and Map 1 show the prevalence rate by district. According to the 2012 NiDS, the national hypertension prevalence rate was 31.8%. Four districts, namely Sekhukhune (16.9%) and Capricorn (18.1%) in Limpopo (LP), together with Gert Sibande (17.7%) and Ehlanzeni (23.2%) in Mpumalanga (MP), had the lowest hypertension prevalence rates. All five rural districts in the Western Cape (WC) and three districts in the Eastern Cape (EC) were among the 10 districts with the highest hypertension rates.

The Northern Cape (NC) and Western Cape had the highest hypertension rates at 38.6%, while Limpopo (22.8%) and Mpumalanga (23.9%) had the lowest rates (Figure 2).

Figure 1: Hypertension prevalence rate (crude) by district, 2012



Map 1: Hypertension prevalence rate (crude) by district, 2012

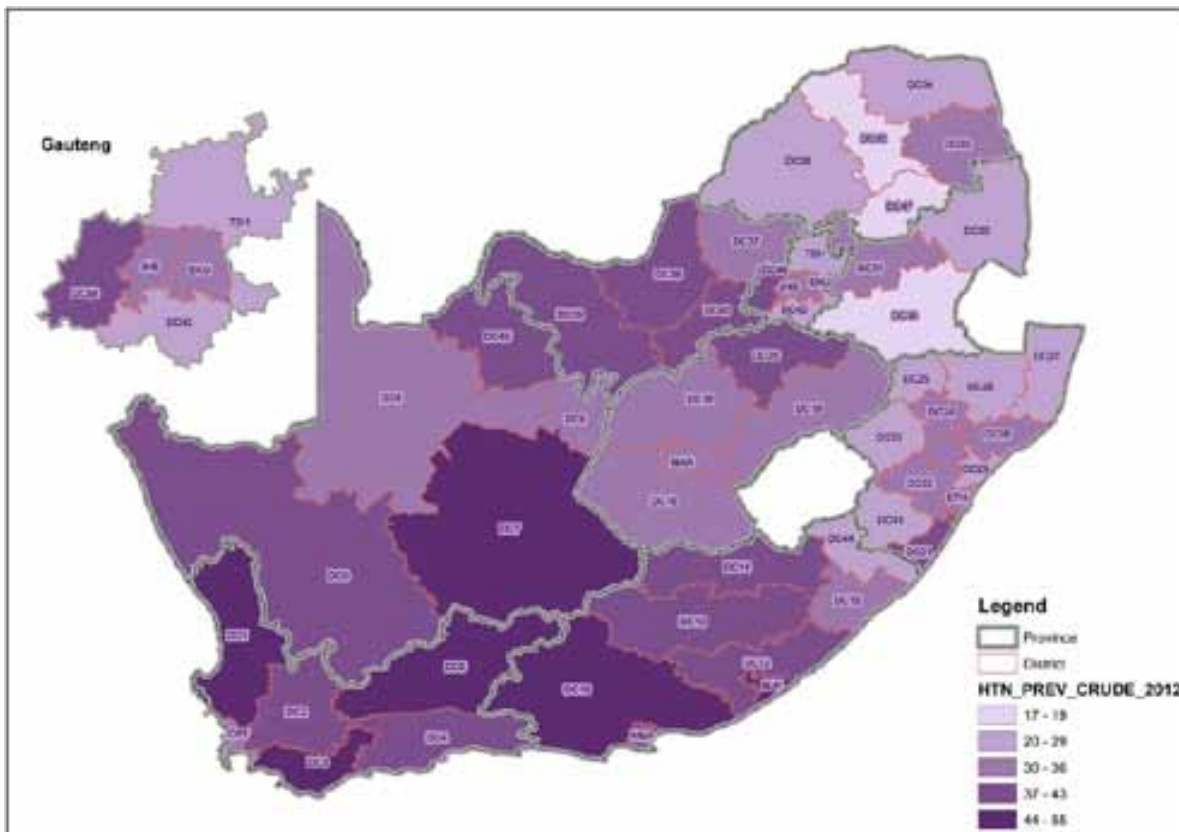
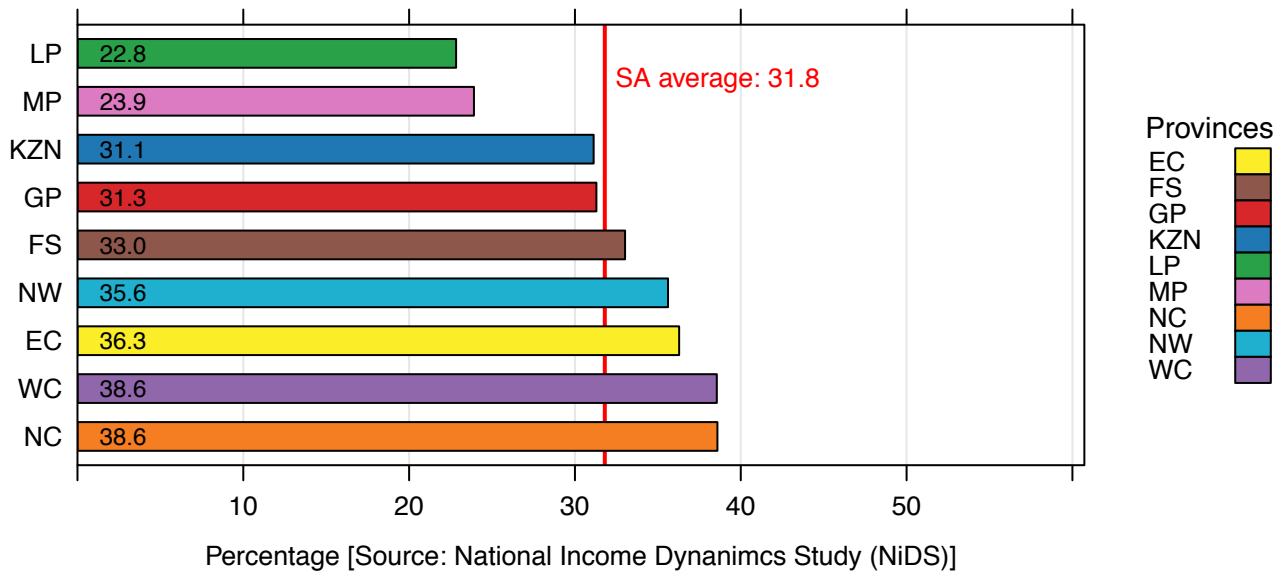


Figure 2: Hypertension prevalence rate (crude) by province, 2012



11.2 Hypertension incidence (annualised)

This indicator measures the number of newly diagnosed hypertension clients initiated on treatment per 1 000 population 40 years and older. The numerator is 'hypertension client treatment new' and the denominator is 'population 40 years and older'.

Data quality

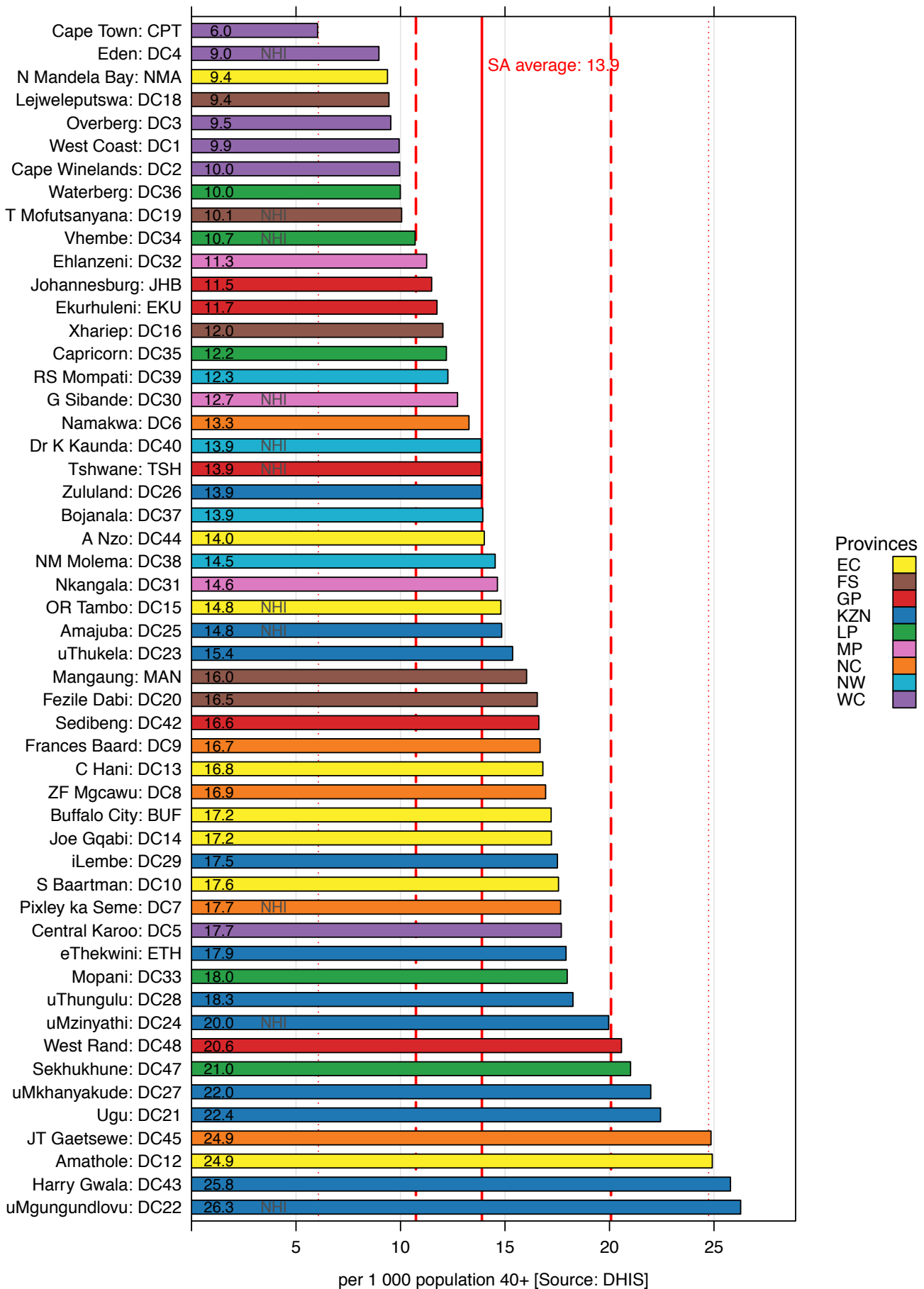
In total, 4 290 clinics (fixed and other clinics) reported at least one case of hypertension per year (Table 1). Of these, 3 357 clinics (78.3%) had 50 or fewer cases per year, while 45 (1.0%) had 500 or more cases of hypertension per year. The majority of the clinics with at least 500 cases were in the metros, with 19 facilities in Gauteng (GP) and 14 in KwaZulu-Natal (KZN). The highest number of cases (4 150) was recorded in Stretford Community Health Centre in Johannesburg (GP).

Table 1: Number of hypertension cases per facility per year

Number of cases per facility per year	Number of facilities	Percentage
1-50	3 357	78.3
51-100	516	12.0
101-500	372	8.7
501+	45	1.0
Total	4 290	100

The national hypertension incidence rate showed an annual decrease from 22.3 per 1 000 population aged 40 years and older in 2011/12, to 13.9 per 1 000 in 2014/15. The decrease might be due to an under-reporting of diagnosed cases due to poor data quality. Five of 10 districts with the lowest hypertension incidence rates were from the Western Cape, and six of the 10 districts with the highest hypertension incidence rate were from KwaZulu-Natal (Figure 3 and Map 2). This is mirrored in the provincial picture (Figure 4), where the Western Cape had the lowest incidence rates and KwaZulu-Natal had the highest.

Figure 3: Hypertension incidence (annualised) by district, 2014/15



Map 2: Hypertension incidence (annualised) by sub-district, 2014/15

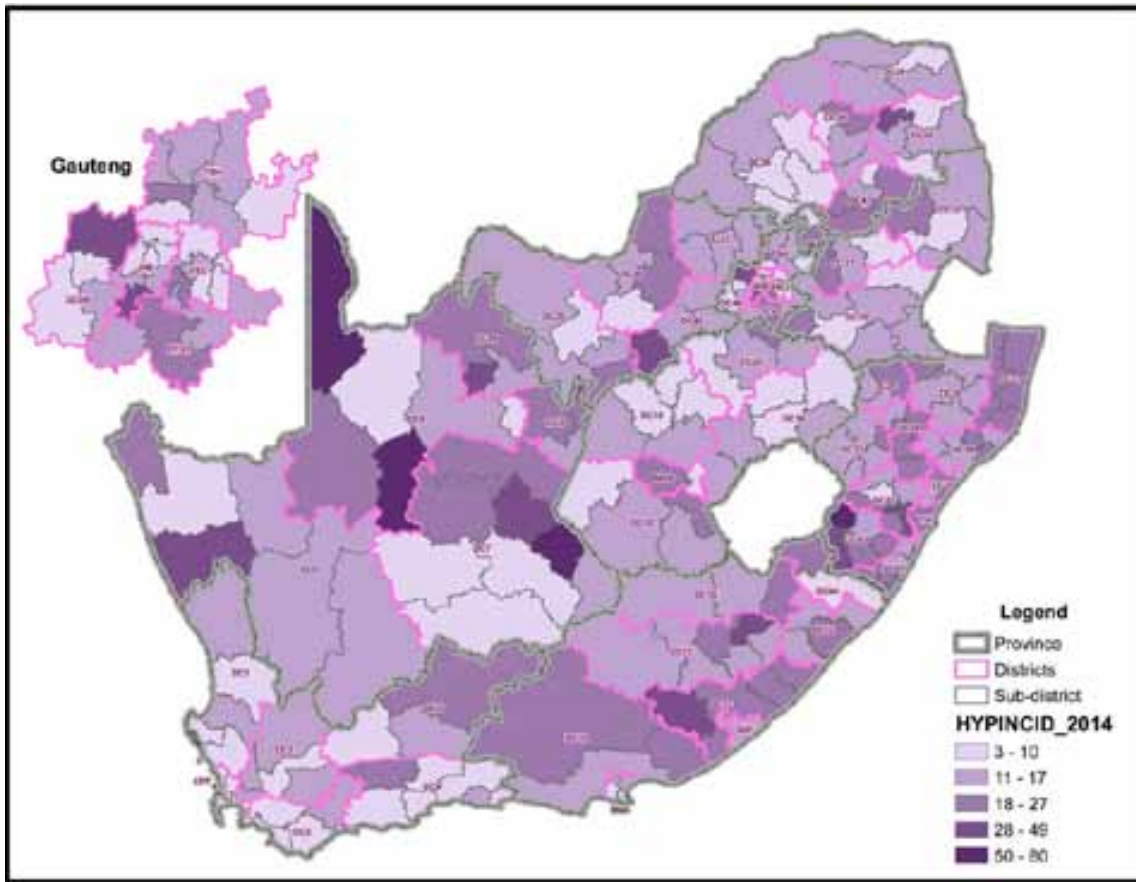
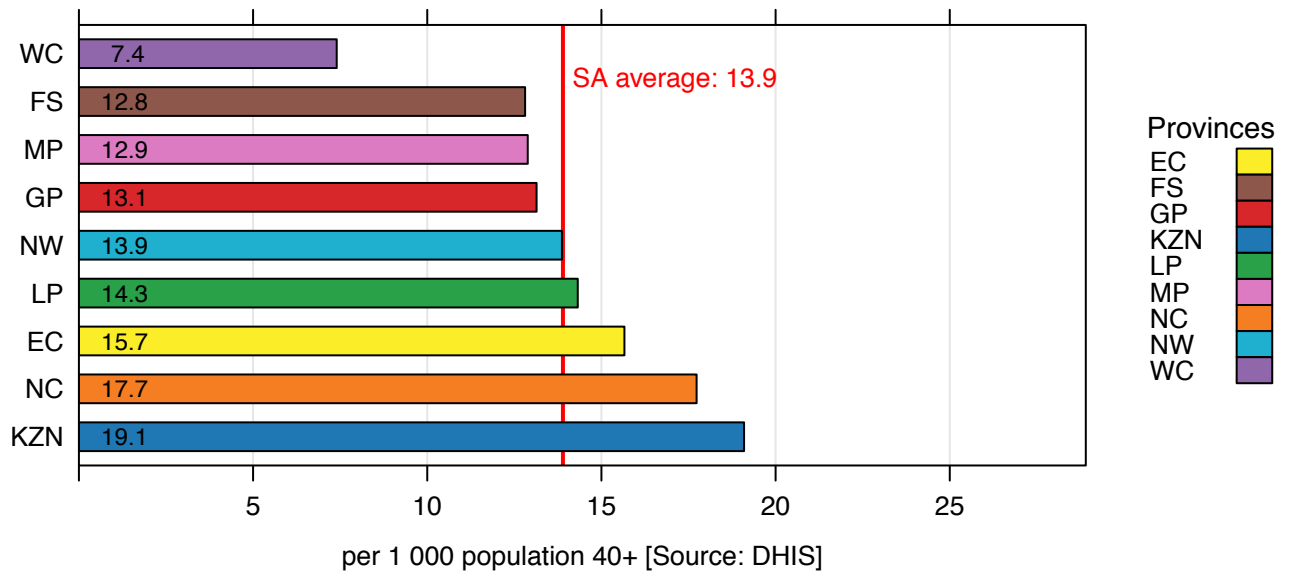


Figure 4: Hypertension incidence (annualised) by province, 2014/15



11.3 Mental health admission rate

The main mental health disorders that could lead to seeking mental health admission include major depressive disorder (MDD), schizophrenia, bipolar disorder, obsessive compulsive disorder (OCD), post-traumatic stress disorder (PTSD) and personality disorders. Others include alcohol and substance use disorders, and panic disorders. Three survey studies,^{j,k,l} done in South Africa show a 12-month prevalence rate of between 0.6% and 8.1% among adults in household surveys for the different types of mental health disorders (Table 2).

Table 2: Prevalence of mental health disorders by type from selected literature (1998, 2008 and 2014)

Mental disorder	Twelve-month prevalence (%)
Anxiety disorder	8.1
Personality disorder	6.8
Substance use disorder	5.8
Major depressive disorder (two surveys)	4.8, 4.9
Alcohol use disorders	4.5
Post-traumatic stress disorder	0.6

A 2014 study^m in KwaZulu-Natal province on the burden of untreated mental health disorders showed a treatment gap of approximately 80% for those in need of acute inpatient care, which could imply that the treatment gap in the rest of the provinces is also high.

The mental health admission rate indicator measures the proportion of clients admitted/separated for mental health problems. The numerator is the 'mental health admissions total' and the denominator is 'inpatient separations total' (total of inpatient discharges, inpatient deaths and inpatient transfer outs).

The national mental health admission rate was 1.2% in 2014/15, an increase from 1.0% in 2013/14. The districts with the highest rate were Sarah Baartman (4.3%) (EC), Harry Gwala (3.4%) (KZN), Cape Town (2.9%) (WC), Vhembe (2.8%) (LP) and Ugu (2.5%) (KZN). Overberg and West coast districts (both in Western Cape) admitted no mental health patient in 2014/15. Twenty-five districts had a mental health admission rate of less than 1.0%, with the lowest rate in Namakwa (NC) at only 0.02% (Figure 5 and Map 3).

Districts with a high concentration of specialised psychiatric hospitals tended to show higher admission rates. For example, all four specialised psychiatric hospitals in the Western Cape are located in Cape Town. Similarly, Sarah Baartman, Chris Hanani and Nelson Mandela metros in the Eastern Cape, as well as Harry Gwala in KwaZulu-Natal, each have a specialised psychiatric hospital. Three of the four national health insurance (NHI) districts with the highest mental health admission rates all have a specialised psychiatric hospital.

The Western Cape had the highest rate of 2.3% and Gauteng had the lowest rate of 0.5% (Figure 6).

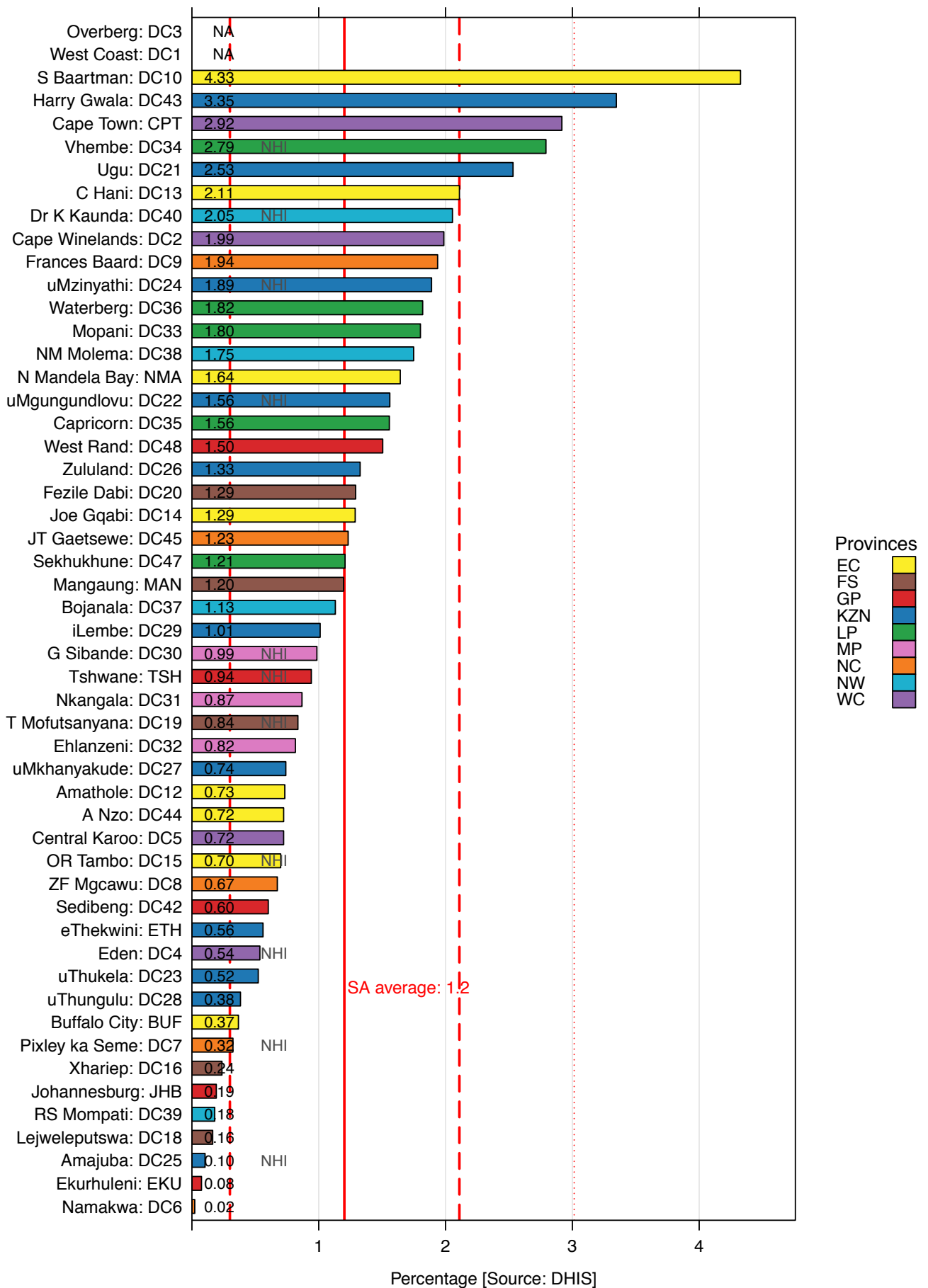
j Bhagwanjee A, Parekh A, Paruk Z, Petersen I, Subedar H. Prevalence of minor psychiatric disorders in an adult African rural community in South Africa. *Psychol Med.* 1998;28(05):1137-47.

k Williams D, Herman A, Stein D, Heeringa S, Jackson P, Moomal H, et al. Twelve-month mental disorders in South Africa: prevalence, service use and demographic correlates in the population-based South African Stress and Health Study. *Psychol Med.* 2008;38(02):211-20.

l Suliman S, Stein D, Williams D, Seedat S. DSM-IV personality disorders and their axis I correlates in the South African population. *Psychopathology.* 2008;41(6):356-64.

m Burns JK. The burden of untreated mental disorders in KwaZulu-Natal Province – mapping the treatment gap. *S Afr J Psych.* 2014;20(1):6-10.

Figure 5: Mental health admission rate by district, 2014/15



Map 3: Mental health admission rate by district, 2014/15

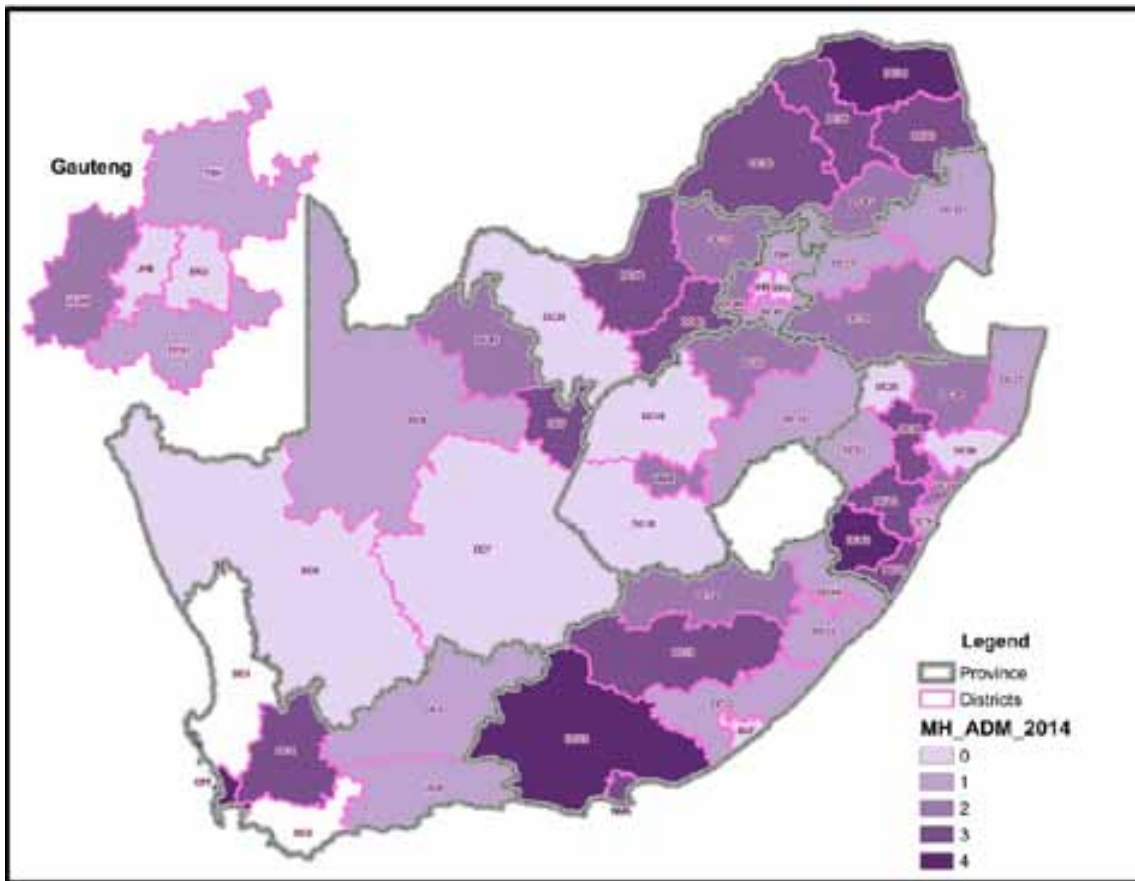


Figure 6: Mental health admission rate by province, 2014/15

